

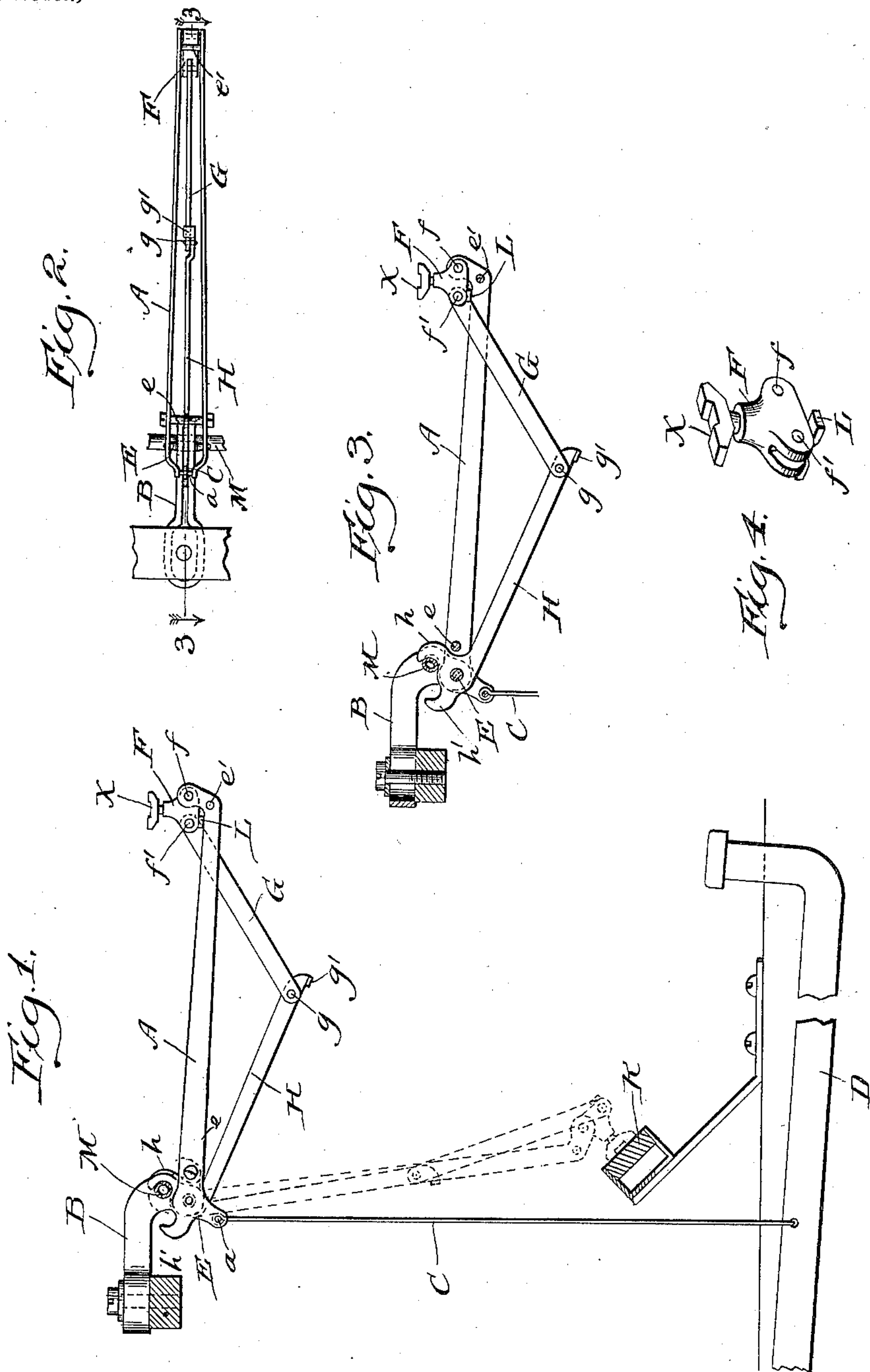
No. 652,679.

Patented June 26, 1900.

C. G. KVARNSTROM.
TYPE ARM FOR TYPE WRITERS.

(Application filed Feb. 25, 1898. Renewed Oct. 7, 1899.)

(No Model.)



Witnesses
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TYPE-ARM FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 652,679, dated June 26, 1900.

Application filed February 25, 1898. Renewed October 7, 1899. Serial No. 732,964. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. KVARNSTROM, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Type-Arms for Type-Writers, of which the following is a specification and which are fully illustrated in the accompanying drawings, forming a part of the same.

The invention relates to that class of type-arms in which the type characters are carried by an oscillating block at the end of the arm, so that it may be turned to bring the character into position for printing, and upon the return stroke of the arm, so as to bring it into contact with an inking-pad.

The objects of the invention are to secure positive action of the type character and to simplify the construction, and these objects are attained in the manner fully pointed out and as illustrated in the accompanying drawings, in which—

Figure 1 is a sectional detail of a type-writer through its type-basket, showing a side elevation and the action of my improved type-arm. Fig. 2 is a bottom plan view of the type-arm and the hanger for carrying the same. Fig. 3 is a sectional view on the line 3 3 of Fig. 2 inverted, and Fig. 4 is a perspective of the type-block.

I use a rigid type-arm A, consisting of a pair of bars pivoted to a hanger B and oscillated by means of a link-rod C, pivotally attached to a short arm *a*, extending backwardly from the pivot-point and connected with a key-lever D. The pivot-pin E, which carries the arm A, is fixed in the hanger B and has its ends tapered, as shown in Fig. 2, for the reception of the two members of the type-arm A, which are drawn up onto the pivot-pin by means of a bolt *e*. The outer ends of the two members of the arm A are united by a rivet *e'* and are turned upwardly, and the type-block F is pivoted between them at *f*, the pivot-pin passing through a lateral lug of the block F, so that it is out of alinement with the longitudinal axis of the latter. A link-bar G is pivotally attached at *f'* to another lug projecting laterally, like *f*, but from the opposite side of the type-block F and leads to and is pivotally

connected at *g* with the outer end of a lever-arm H, shorter than the type-arm and which swings upon the pivot-pin E, being mounted thereupon between the two members of the arm A. The combined length of the lever-arm H and the link G is greater than the length of the arm A, so that when they are brought into alinement, which position they assume when the type-arm falls, the type-block F is overturned and the type character X mounted thereupon comes into contact with the inking-pad K, located near the bottom of the type-basket. When the joint *g* is flexed, as shown in Figs. 1 and 3, (the position assumed when the type-arm is elevated,) the type-block F is turned upwardly, so that the type character X is in position for printing. When the type-block is brought to this printing position, its body portion is supported directly by the members of the arm A, the block being provided with lateral lugs L for contact therewith.

The turning of the type-block is accomplished by means of a stop M, fixed in the hanger B, and a pair of backwardly-projecting lugs *h h'*, carried by the lever H and so disposed that they contact, respectively, with the stop M during the latter portion of the up-and-down strokes of the type-arm. By this mechanism it will be seen that as the type-arm is raised by the depression of the key-lever the lug *h* comes into contact with the stop M in time to bring the type character to the printing position before the end of the upstroke of the type-bar, and upon the downstroke the contact of the lug *h'* with the stop M causes the overturn of the type-block, so that the type character strikes squarely against the face of the pad K. The stop M is slightly yielding, so as to admit of the completion of the stroke of the type-arm after the contact of the lug of the lever H with it and the consequent turning of the type-block. To secure this characteristic, the stop may be of any desired material or form. A simple and cheap form of construction is shown in the drawings, the stop consisting of a rubber tube set through an aperture in the hanger B, and when the pivotal points of the several type-arms of the machine are in alinement a continuous tube may be used extending

through a plurality of the hangers—a construction suggested by Fig. 2 of the drawings. The action of the type-turning mechanism is so easy that a very soft rubber tube may be
 5 used for the stop M, permitting the type character to rest squarely upon the pad K between strokes. The extreme outer end of the lever-arm H is provided with a stop-lug g' , which
 10 is so placed as to come into contact with the link-bar G as the two members are brought into alinement and prevent the pivot g from passing the center, so as to form a lock.

I claim as my invention—

1. In a type-arm, the combination with an
 15 oscillating arm, and a type-block pivoted to the arm; of an oscillating lever fulcrumed at the center of oscillation of the arm, stops for limiting the movement of the lever to a smaller angle than that through which the
 20 arm swings; and a rigid link connecting the outer end of the lever with the type-block.

2. In a type-arm, the combination with a rigid oscillating arm, and a type-block pivoted at the end thereof; of a jointed lever of
 25 greater length than the rigid arm and oscillating upon the same center therewith, and being pivotally attached to the type-block; and means for straightening the jointed member when moving in one direction, and means
 30 for flexing such member when moving in the opposite direction.

3. In a type-arm, the combination with a rigid oscillating arm, and a type-block pivoted at the end thereof; of a jointed member
 35 of greater length than the rigid arm and oscillating about the same center, and being pivotally connected with the type-block; and means for straightening the flexible member when moving in one direction, and means for

flexing such member when moving in the op- 40
 posite direction.

4. In a type-arm, the combination with an oscillating arm, and a type-block pivotally attached to the end of the arm; of a lever, H,
 45 pivoted upon the same center with the arm and having backwardly-projecting divergent lugs, a stop for engaging such lugs to limit the movement of the lever to a less angle than the movement of the arm; and a rigid link
 50 connecting the lever with the type-block.

5. In a type-arm, the combination with a rigid oscillating arm, and a type-block pivotally attached thereto; of an arm for turning the type-block as the rigid arm oscillates;
 55 and yielding stops for interrupting the turning arm before the rigid arm reaches the limit of its movement.

6. In a type-arm, the combination with a rigid oscillating arm, and a type-block pivotally attached thereto; of a lever, H, oscill- 60
 ating upon the same center with the rigid arm, and having backwardly-projecting divergent lugs, a yielding stop for intercepting the lugs whereby the angular movement of the
 65 lever is less than that of the arm, and a link connecting the lever with the type-block.

7. In a type-arm, the combination with a rigid arm, of a type-block pivoted near one
 70 of its ends to the arm so as to turn in the plane of oscillation thereof, and means for turning the block back against the advancing face of the arm during its forward stroke, whereby the block is provided with a positive
 seat when in the printing position.

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Witnesses:

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